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*Digitalis* which has been noted occasionally for nearly a century, and which was described by CHAMISSO in 1826 under the name *D. purpurea heptandra*. The characteristic features of this form consist of a dialysis of the corolla and staminy of three or more of the petals, thus producing flowers having most typically 7-9 stamens, and scarcely to be recognized as a *Digitalis* flower at all. The degree of development of these characters is variable, and somewhat influenced by the environment, but there is no real transition to the normal form. This form proves to be like the peloric variety, a Mendelian recessive to the normal. The reviewer has also been studying the inheritance of this peculiar variety for five years, and has reached the same conclusion. Miss SAUNDERS confirms the results of KEEBLE, PELLEW, and JONES as to the color-characters.—GEO. H. SHULL.

**Water relations of desert plants.**—FITTING<sup>17</sup> has studied the water relations of the plants growing on the Sahara. He finds, as LIVINGSTON found for the Arizona desert, that the water is generally gained from the surface layers of the soil and not by deep rooting. Many of the plants, especially the perennial shrubs not provided with water-storage organs, develop remarkably high osmotic pressure, which enables them to withdraw water from the comparatively dry soil. On the other hand, the annuals showed much lower osmotic pressure, with lack of ability to thrive in the most exposed places. In many cases the high pressures were due largely to stored NaCl, but frequently entirely to other solutes. Of the 46 species studied, 21 per cent showed an osmotic pressure exceeding 100 atmospheres; 35 per cent exceeded 53 atmospheres; 52 per cent, 37 atmospheres; while only 11 per cent showed osmotic pressures as low as 11 to 22 atmospheres. Species showing extremely high pressures in dry desert conditions show much lower pressures in moist situations. This marked power of certain plants to adjust their osmotic pressures to the water-withholding power of the medium in which they grow has been demonstrated for salt marsh plants by HILL,<sup>18</sup> a piece of work which FITTING does not cite. We have known little about the osmotic pressure of desert forms, and this work supplies much of the deficiency and makes this character of great significance in the physiology of these forms.—WILLIAM CROCKER.

**Permeability.**—SCHROEDER<sup>19</sup> has studied the semipermeable membrane of the wheat grain, and confirms the work of BROWN on the barley, but adds little that is new. The portion of the coat forming the semipermeable mem-

<sup>17</sup> FITTING, HANS, Die Wasserversorgung und die osmotischen Druckverhältnisse der Wüstenpflanzen. Zeitsch. Bot. 3:209-275. 1911.

<sup>18</sup> HILL, F. G., New Phytologist 7:133-142. 1908; Rev. in BOT. GAZETTE 47:170. 1909.

<sup>19</sup> SCHROEDER, H., Ueber die selektiv permeable Hülle des Weizenkornes. Flora 102:186-208. 1911.